DOCUMENT RESUME

ED 286 774 SO 016 842

AUTHOR Copley, Paul
TITLE Schooling a More Productive Workforce: What Can We Learn from the Japanese?
SPONS AGENCY U.S.-Japan Education Group, San Francisco, CA.
PUB DATE 85
NOTE 20p.
PUB TYPE Viewpoints (120)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Academic Achievement; Educational Objectives; Educational Philosophy; Educational Theories; Education Work Relationship; Elementary Secondary Education; Foreign Countries; *Human Capital; Job Performance; *Labor Education; *Labor Force; Organizational Effectiveness; Organizational Theories; Performance; Performance Factors; *Productivity; School Business Relationship
IDENTIFIERS *Japan

ABSTRACT

If competitiors of the United States are making superior products and distributing them more effectively throughout the world, it may be because they are educating workers and managers in ways that create superior skills and discipline. Some U.S. educators agree with businessmen who point to Japan as a model that the United States should strive to emulate. One of Japan's keys to success has been a secure, well disciplined, highly motivated, and intellectually sophisticated work force. Through the use of quality control teams, laborers join managers to accelerate efficiencies in the factory through attention to detail and a willingness to improve their own productivity. To achieve this, Japanese schools teach self-discipline through the use of national examinations, which rank and separate students at the ninth-grade level. All students are taught the same curriculum, which stresses self-discipline and learning classical subjects rather than developing specific, marketable skills. An ideal Japanese business recruit will be self-disciplined and achievement oriented and will accept the dominance of the work group over self-interest. Shortcomings of Japan's educational system include the lack of interest in encouraging creativity, individual initiative, innovation, and higher level cognitive skills. What the United States can adapt from the Japanese school system will be constrained by the U.S. culture, the heterogeneity of its population, local control of schools, and the tendency of U.S. citizens to focus on self-achievement. (JHP)

**********
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
**********

ED286774

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Paul Copley

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

# SCHOOLING A MORE PRODUCTIVE WORKFORCE: WHAT CAN WE LEARN FROM THE JAPANESE?

by
Paul Copley

1985

Work supported by a fellowship from the U.S.-Japan Education Group in Palo Alto, CA.

SO016842

BEST COPY AVAILABLE

SCHOOLING A MORE PRODUCTIVE WORKFORCE: WHAT CAN WE LEARN FROM THE JAPANESE?

That we have been sharply critical of our public schools recently is obvious. Why in 1982 we chose to sharpen our critical eye may not be quite as clear. The Bell Report gives us a clue as to why our schools needed attention immediately. Within that report and implicit in much of the discussion that it has stimulated is the perceived assumption that our schools are in part responsible for a national economic malaise. The dominant arguments point to the notion that the recent deterioration of our industrial sector as well as the loss of markets to foreign competitors reflected in our serious trade imbalance, has in part been caused by the failure of our public schools. This connections logic asserts that if our economic competitors, like Japan, are making superior products and distributing them more effectively throughout the world it may be because they are educating workers and managers with superior skills and discipline for the task than are we. Based on this supposition, some in the educational establishment have joined those in business who point to Japan as the model toward which we should strive. Japan's gains in productivity (increased economic efficiency measured by output per worker) are well documented, as is the visibility of their marketing success that we are reminded of daily in our auto showrooms, electronic, and appliance stores.

In pursuing this connection we are in a sense basing

judgment of our schools' quality on how well they produce what economists refer to as "human capital." Human capital describes the quality of a workforce when measured as a factor in producing or distributing goods or services. The more educated the workforce, hence the more efficient the process of producing. For years economists have linked the quality of learning brought to the factory floor or office with the capacity of the workforce to increase productivity. For example, how intellectually adaptable is a workforce when faced with the evolving sophistication of technologies that are introduced into the workplace? Lester C. Thurow in his book The Zero-Sum Society explains that the capacity of a workforce to increase its own productivity is based on how quickly and creatively they learn to abolish inefficient tasks or adapt to new mechanizations. A secure labor force that sees a company's commitment to workers in the long-term is essential. But so is education important, along with the capacity of a workforce to be open to learn while on the job. We have been reminded by observers of Japan's leap into predominance as a producer of manufactured products that one of the central keys to their success has been a secure, well-disciplined, highly motivated, and intellectually sophisticated workforce. Laborers team with managers to accelerate efficiencies on the factory floor through worker attention to detail and the willingness of each worker to participate in improving their own productivity. The quality control circle, originally a U.S. idea, is a good example of Japanese

application of both of these ideas.

As I toured Japan with nine other economic educators in 1983 observing schools, factories, interviewing teachers, workers, and students, it seemed important to explore to some degree just what the Japanese schools do consciously or unconsciously to cultivate "human capital." It then seemed equally important to ascertain what it is that we can learn from the Japanese model that would help to reform our own schools as producers of a more efficient workforce.

How do our schools compare? To begin there is little question amongst experts, American or Japanese, that U.S. public schools provide greater academic freedom, stress a more varied curriculum and encourage much greater instances for creative thought. Japan's classrooms have more pupils per instructor than do ours, and as a percentage of the Gross National Product the U.S. already slightly exceeds the Japanese in resources aimed at education. Yet, Journalist Robert Christopher, former editor of Time and Newsweek magazines and a scholar in Oriental studies, claims that despite these comparisons to our advantage when it comes to the application of learning to productivity performance of a workforce the evidence is not so complementary.

> Only one of scores of Japanese industrialists I know has ever been blunt enough to tell me openly that the workers in his U.S. factories were more poorly educated than those in his Japanese factories. But that is nonetheless what most Japanese businessmen who are familiar with the American scene believe. In a survey that Tokyo's Nikko Research Center conducted among Japanese companies with U.S. operations, 65 per cent of the respondents said that productivity in their American plants was lower than in their Jap-

> anese plants. And without exception they blamed that fact in large part on the inferior education and job skills of American workers. (1)

Christopher further maintains that no matter how tempting it would be to dismiss these comments as a product of Japanese chauvinism , analysis of more objective data may not permit it. He cites a 1970 United Nations study:

> A U.N. sponsored group administered a series of identical science tests to 10 and 14 year-old children in 19 countries. In both age groups, the Japanese youngsters tested scored higher overall than children of any other nationality. American youngsters, sad to relate ranked fifteenth in overall score -- and there is no reason to believe those relative rankings have changed. (2)

However, more helpful than comparing test scores, or curriculums, is to attempt to put the Japanese school into a context that will allow us to understand its purpose, focusing particularly on its impact on the Japanese worker and the issue of productivity. It is within this contextual linkage that we may learn something from the Japanese.

Just what is it that the Japanese school sets out to achieve? First and foremost they aim at creating a sense of self-discipline. To the Japanese self-discipline is more complex than simply instilling the value of hard work. If education is measured by time spent on tasks within the classroom and at home, then the Japanese student certainly works longer hours if not "harder hours." Also, if learning is measured by quantitative amounts of facts retained then Japanese students also show a greater capacity to discipline themselves to master subject matter than do our students. Comparing test results that examine fact retention as

Christopher cites in the U.N. exam study make them look very good. The Japanese student may have no concept of why the subject matter is important but they are disciplined to memorize it. However, self-discipline goes beyond this it means also that the Japanese school endeavors to create a disciplined-self. Strict quantitatively measured exam-oriented curriculums are designed to provide the developing student a precise idea of their own achievement within the context of the peer group. These national subject area exams, are strategically placed in the road of a student to explain to the student where they stand. From as early as three years of age the Japanese youngster is faced with a law of scarcity. The scarce positions in the better elelmentary schools in the early years are a prelude to the scarcity of positions in the top universities and elite corporations in later years. (see Figure A) The exam-based "meritocracy" disciplines the student to appraise their own capacity by comparing themselves with others based on national exams that that evaluate relative merit. As a result few students through grade 9 at least are given special attention and there are few counselors available to soften the impact of failure. The exam results are explicit, documented and posted on bulletin boards for all to see. If this specter of judgment by exam seemed ruthless and impersonal, we were assured by Japanese officials that it was exceptionally egalitarian. The potentially "gifted" must receive the same education, the same opportunity through grade 9, in the

public school at least, as the slower students. The exams will soon separate each student based upon their relative merit. There is little tracking, or individualized learning. Officials of a junior high school just outside of Osaka admitted to our visiting group that almost half their students cannot keep up with the pace of the assignments yet are pressed on up through grade levels until the exams separate them. It is very important that everyone receive an equal chance, as well as equal pressure. (insert chart here)

The curriculum is standardized throughout the country. It is said some classes are on the same page on the same day as another class 100 miles away. This brings up a second major goal of Japanese schooling. Students learn what they are supposed to learn and everyone is evaluated on the same task. That unified task identification is as important as developing the knowledge of where you stand in the group. The curriculum reflects bias toward disciplining the self rather than developing specific marketable skills. The subject areas are classical. There is no economics, no "intro to law," no computer science, but ethics interestingly enough is mandatory attesting to the greater interest in establishing standardized Confucian values than in developing marketable skills. It was, however, the <u>lack</u> of critical thinking, creative methodology and interpretative skills that impressed our observers as we toured and interviewed teachers and students. When, for example, a Japanese history teacher was questioned by one of our people at a high school in

Hiroshima, about the difficulty of teaching Japanese foreign policy in the 1930s and 40s, his response was illustrative of the restrictive one-dimensional nature of the instruction. The question was "how do you deal with the justification of your country's policy, what kind of value-oriented issues does it raise"? The response of the Japanese teacher; "we teach facts," "the battles, who won or lost and the outcomes...then we move on. For values we have a course in ethics!" The message was clear, it was not the job of that teacher to interprete the meaning of Japan's history, or open to any student an exploration of values, but simply to help the students pass the standardized exam in Japanese history. Those exams also reflect content that is at the whim of the Japanese government. On more than one occasion, the government has altered texts to reflect a political or ideological swing. In summary, the process eliminates two major negative tenants of individualism. These traits are unacceptable to the Japanese mind, as well as to the Japanese company.

A. The aimlessness of an individual alienated from a clear understanding of where their merits of talents are positioned relative to others.

B. The egocentric individual who believes that their own aggrandizement supersedes the groups.

More than one Japanese spokesperson used the phrase "In Japan the protruding nail is hammered down." Descriptive, the phrase became a favorite of industrialists and educators,

as a way of orienting us to the Japanese mind. Our group, dominated by a Western preoccupation with the predominance of the individual at first assumed the phrase was being used critically to point out a shortcoming in the dominance of group or the institution on the freedom of the Japanese individual. Yet upon closer discussion we found that it meant something much less "Orwellian" to the Japanese. Logically a protruding nail represents two distinct hazards. First, it is a safety menance protruding ready to harm an unsuspecting member of the group in much the same way as a self-aggrandizer in a company harms everyone by putting his or her interests above the commonweal. Secondly, a protruding nail is worthless, it is not doing the job it was designed to do...For example, sealing of two pieces of wood. What good is a person who desires to be "their own man or or woman" if it benefits no one else and is a hazard to the community besides?

The scarce top spots in the university, the only avenue to jobs in the more desirable companies, are achieved by virtue of exam-based merit alone. Neither family ties, teacher recommendations, student body activities, nor even grades count...just the performance on the subject exams that measure achievement of nationwide subject area standardized goals. Ironically (see Figure A), once in a select university, Japanese students are not pressured to achieve on the same high order as in public schools. Perhaps because the nation perceives the need for a period of rest from the

the grind, or perhaps a chance to act out "fantasies" of individualistic expression." Political activism is very strong on many campuses...not necessarily a mark of individualism, however. For whatever reason, Japanese universities, even the prestigious national universities, have a curriculum except for medicine and engineering, far below the standards of American universities. Yet when a company comes looking for a candidate in a university they feel that simply by having been admitted, the candidate represents a popotentially valuable employee. Top companies in Japan then select from "top national universities," lower level companies select from lower level universities and lastly 60% of non-university candidates, weeded out by virtue of the grade 12 exams will be picked up as blue-collar workers or move toward the smaller satellite companies. Regardless of what company they work for; what is it that the firm is looking for in a candidate?

1) A self-disciplined, achievement-oriented individual who knows that their incentive structure is tied to the group. They are not looking for a particular skill in a candidate so much as what some observers refer to as "latent capacity." With lifetime employment guaranteed a social contract is developed that allows both employee and employer to mold their personality and develop their skills where management believes they can best advantage the company. It is second nature for an employee to respond to the question "What do you do?" with "I work for ____." The last kind of

employee that the company wants in such a social contract is one who plans to use the company as a personal stepping stone to either higher salary, or greater individual status and power. Thus, it is important that the company be more important than the particular position. The employee has been disciplined at an early age in the school to accept the dominance of the group and to see themselves as servants whose individual talents are to be molded for the group's institutional, standardized well-being. In return, advancement, status, and power will be rewarded by the group based upon your value to the commonweal.

What are some shortcomings of Japanese schooling? First, the Japanese will argue strongly that theirs is a pure merit educational system where pure ability is measured to determine opportunity and mobility. Family income or social standing is, according to the Japanese, not a factor. Schools are for everyone, and everyone gets an equal chance to prove themselves in this type of egalitarian meritocracy. They pointedly argue that success in America is based on education yet education can be bought. They point out that America has schools for minorities that are much below the quality of schools in income-rich suburbs. They are right about that, of course, yet two things destroy their own argument that their schools are purely egalitarian systems.

(A) Although public schools are co-educational, there is much evidence that parents tend not to encourage girls to aspire to the most prestigious departments and universities,

and often wish to invest their efforts in sons that they believe will be more able to turn their degrees into better jobs and income security.

(B) Many families are now spending tremendous sums of income on private tutors and private schools that teach students how pass the exams. Many parents pay up to 20% of monthly income for these "Juku's" starting at a very young age. While in 1961 almost 40% of the top national university students were from lower income families the percentage is dropping to less than 20% today. This is because parents with higher incomes can afford the extra "Juku" training (often as early as three or four years of age), and thus tend to score better on exams. So much for egalitarianism!

Secondly, the discipline of the self seems to be taking a serious psychological toll on teachers and students alike. Much has been made in this country of the high suicide rate amongst Japanese youngsters. The Japanese were shocked themselves at the growing amount of disrespect and delinquency amongst the school age. By American standards, disruption to the rather authoritarian nature of student-teacher relationship in the Japanese school is miniscule. Yet, the growing amount of students who are refusing to cooperate is causing the Japanese much concern. With the exam pressure, the stiffled fact-oriented curriculum, and the rigidity of the closed-ended selection process the rebellion of the Japanese student would seem natural, if not

long overdue. The Japanese culture is based, however, on a premise of order and harmony, and the suppression of the kind of individualism we tend to glorify. As a result, change will come only grudgingly.

Thirdly, critics argue tnat the curriculum and particularly the rigid instructional mode of teaching in the Japanese schools puts a premium on rote memorization and regurgitation on standardized exams at an extraordinary expense of creativity, individual initiative, innovation, and the mastery of higher level learning skills. Industrialists have been more than pleased to hire candidates for the work-force at all levels that are skilled in self-discipline, in loyalty, and with that "latent capacity,." to be exploited over a lifetime of worklife. Yet some leading companies like Sony and others that on the frontier of technical exploration lament the "herd" tendencies of the Japanese and instead desire someone that can think creatively even if some of the ideas are not acceptable to the group. Many young Japanese entrepreneurs admire an American education that may not have standardized scores as high as the Japanese on concrete, fact-oriented exams, yet emphasize student-centered exploration, laboratory experimentation, the scientific method of inquiry in Social Studies, and the inter-disciplinary study of the humanities and the arts. They admire these traits because it enhances a thinking indi-individual. This vocal minority have spoken often of their enbarrassment in being regarded as a nation of "borrowers"

or "disciplined automatons" that apply other nation's inventions instead of being leaders in research and invention.

Professor Thomas Rohlen of Stanford University, anthropologist, and expert on Japanese culture concludes the following concerning Japanese education in his recent book on Japanese high schools.

> The system, he says, makes students "virtual information junkies, but it doesn't teach them to evaluate facts, as well as absorb them. Diligence, outward conformity and self-denial are virtues highly valued in Japanese education and culture. Initiative and individual brilliance are discouraged.
> "There is no individual research done on the high school level, raising the question of whether Japan can shift from being a follower in research and development into being a follower in research and development into being a world leader."
> Rohlen warns, one of the most serious drawbacks in the Japanese system is its extreme conservatism: in order to change anything on an entrance examination, the entire national curriculum must be adjusted, from textbooks to teacher education.
> "This," he says, "does not bode well for a future in which innovation will be very important." (3)

Lastly, the Japanese postwar economy is going through a significant change, a change that may pressure the school to alter its goals. Mr. Kazuo Nukazama, Director of Financial Affairs Department for Keidanran, the Japanese Federation of Economic Organization), in an informal conversation with our group pointed out that the link between the school and the corporation established over the last century will most likely undergo substantial change. The former and present role of the school as a producer of disciplined "human capital," ready to be molded by the various companies in the skill direction that they desire over a period of a 40 year

working lifetime will become less and less the rule according to Nukazama. This economist sees a lessening dominance of the manufacturing sector employment in the Japanese labor market. That decrease in demand for job opportunities will be supplanted by a growing service sector dominated by small firms able to stay in the market for a shorter length of time. With less employment growth in the large corporate sector, particularly manufacturing, there will be less demand for students with simply "latent capacity" and more interest in the smaller, shorter life-span firms for employees with specific skills who can be used immediately. Schools will thus be asked to create programs, clerical, mechanical, and technical that allow the individual a chance to adapt to the rapid shift in skill demand. Two year special training institutes are already on the rise, possibly a sign that reform aimed at a more flexible, skill-oriented curriculum may be shifting downward through the grades. This is a shift that may lessen the autocratic dominance of the national exam system.

So what can we learn from Japan?

(1) There is little doubt that the school and the company have been more closely linked than in the U.S. Yet that is because of the Japanese firm not necessarily the conscious work of the educational establishment. Will companies continue to be as interested in commiting extensive skill training for workers who may only be with the company two or five years? If and when U.S. firms and their labor

labor force draw the kind of long-term contractual relationship that the Japanese have enjoyed since 1945, maybe their productivity will increase with workers seeing that greater self- efficiency will not mean redundancy and a pink slip. Greater personal commitment toward productivity will follow. American schools are left somewhat on the sidelines in such a nationwide industrial scenario.

(2) There is also little doubt that the Japanese worker is educated in the schools to sublimate the self to the group and as a result is better able to become married to the integrated nature of production. The elimination of individual alienation is an entrenched goal of every workplace in Japan. Yet the trade off is an ego-deflation and the loss of a creative individual willing to run against the group on occasion in pursuit of innovation.

(3) Japanese critics focus the source of a stifled creativity on an exam system that channels everyone through a standardized one-dimensional, strictly measurable series of subject interrogations. There must, they argue be some freedom from its dominance. Yet to do that is to release the Japanese individual from the dominance of group harmony that is culturally intrinsic. If Japan is to change it will either be a response to market forces, changes in technology, or transitions of economics (manufacturing to service). Whatever the motivation, structural change will need to adapt to the cultural constraints that have, for example, limited the equality of female access to

educational, and employment opportunities. Will Japan shift from group harmony to individual freedom as the dominant cultural ethic? What we can adapt from the Japanese is constrained by our own culture, by the dominance of heterogeniety, local control and the rooted tendency of Americans to opt for self- aggrandizement as the primary aim of the student or the worker-manager.

Christopher's citing of the frustration of Japanese managers toward the American pool of "human capital" provided them for their U.S. based operations must be taken seriously. Yet to find the secret to a more adaptive, intelligent, and "willing to sacrifice" workforce in America by studying the pedagogy of the Japanese schools is both futile and could be potentially counter-productive.

(17)

A

## • Stratification in Education Matches the Stratification in Industry

### "Egalitarian Meritocracy"

Pressure to get into "top" primary schools → Pressure in primary grades to compete well on 9th grade exams for admission to "top" high schools which provide the most competitive preparation for university exams

Special "JUKU" training *(exam preparation academies)* → JUKU training

Admission to "top" universities based only on 1) nation-wide standardized subject matter achievement exams 2) based upon the results of those exams, a chance to compete on specific university exams

Highest standard Imperial Univ *(i.e. Tokyo U)* State supported *(money not a factor in admission or for next 4 years)* Simple admission assures the student entry into one of the major firms or government agencies

Most prestigious firms, in finance, industry, or government fix quotas for new candidates each year and have a fixed group of 3-6 universities in which to fill their quota

Selection to these positions is based upon an exam that the company will administer *(general capacity type of exam)*
Also see Section # 5. "Human Capital" for more on education

← Selection is also based upon a go between or broker at the university that matches the needs of the company with the interests of the candidate

"Top" firms offer best wages and career opportunities

"Top" firms offer most attractive options at age 55

Firms are careful to keep promises of opportunities that they provide candidates in order to develop trust of the university brokers

## • Other Choices in the Strata in the "Meritocracy"

Off to a "poor" start in elementary school → Low performance means 1) no chance of getting into higher achievement private elementary (grades 1-9) schools regardless of the ability to pay 2) in the public school up to 50% of the students are not keeping up with the instruction according to a national poll

Mediocre performance on 9th grade exams

Mediocre poor performance on national and university entrance exams

Choice limited to a "minor" university or trade school

← Occupational choices limited to "satellite companies"

Lower wages, less career opportunities

Limited options at retirement *(open noodle shop or move in with kids)*

## Notes

1. Robert Christopher "Who is Winning the Education Race", United News, Dec 1983 P 32

2. Ibid P 34

3. Thomas Rohlen "Japanese Education" Peninsula News, July 6, 1983

Figure A - Educational Meritocracy is taken from "The Productivity Factor" - Paul Copley 1984